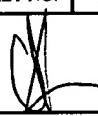




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/432,984	11/02/1999	MELVIN PARK	140-032	1878 
7590	07/10/2002			EXAMINER
WARD & OLIVO 708 THIRD AVENUE NEW YORK, NY 10017				BERMAN, JACK I
ART UNIT	PAPER NUMBER			
	2881			

DATE MAILED: 07/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/432,984	PARK ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jack I. Berman	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 August 2001 and 14 March 2002.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-40 is/are allowed.
- 6) Claim(s) 41-57 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ .                                   |

Art Unit: 2881

The amendment filed August 16, 2001 proposes amendments to the claims that do not comply with 37 CFR 1.173(b), which sets forth the manner of making amendments in reissue applications. A supplemental paper correctly amending the reissue application is required.

In order to expedite prosecution, the examiner has treated the amendments as if they were entered, but any subsequent amendments must resubmit the amendments in proper form.

Claim 51 is objected to because of the following informalities: "defection" should read -- deflection--. Appropriate correction is required.

Applicant's arguments with respect to claim 41 have been considered but are moot in view of the new ground(s) of rejection. While Le Poole's deflection system does not completely anticipate the multideflector claimed in the instant application, it does make the multideflector obvious.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 41, 42, 49, 50, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Poole. At line 47 in column 3 through line 4 in column 4, Le Poole teaches:

The beam deflection system of the embodiment shown comprises a matrix of deflection elements 26 (shown in FIG. 1) with an electrode array 28 (shown in greater detail in FIG. 3) for deflection in an x-direction and an electrode array 30 for deflection in a y-direction transversely of the x-direction. The electrode arrays may all be mounted in the same plane, transversely of the optical axis, but in order to prevent imaging faults due to field inhomogeneities, it may be attractive to arrange the arrays one behind the other in the direction of the optical axis. Thus a lower capacitive coupling is also achieved, so that any crosstalk between the two arrays during control can be reduced. The electrodes provide apertures

Art Unit: 2881

having, for example, transverse dimensions of from 0.5 to 2.0 mm for each of the elementary beams and are provided with a pitch of, for example, from 1 to 5 mm. A potential is to be applied to at least one electrode of each electrode array, but preferably to both electrodes. The matrix of deflection elements may also be composed of electrodes mounted on an insulating carrier, for example, by means of the so-called thick-film technique. A carrier provided with the desired apertures and made, for example, of  $\text{Al}_2\text{O}_3$  with a thickness of 0.5 mm, is provided on both sides with an array of electrodes and conductive tracks for applying the desired potentials thereto.

This means that the portions of the insulating carrier between the apertures of the matrix of deflection elements each consists of a pair of electrically conducting electrodes, one for each of the two adjacent apertures, separated from one another by an insulator and each of the electrodes is energized to a desired potential. In order for the charged particle passing through any given aperture to be successfully deflected, then the potentials applied to the electrodes on opposite sides of the aperture (in the preferred embodiment wherein a potential is applied to both electrodes), would have to be opposite to each other. Otherwise, the resulting electrostatic fields would cancel each other out. Since Le Poole teaches that the charged particle beams passing through each of the apertures in the insulator can be deflected independently of each other, the potentials on any given pair of electrodes would be constant when the beam passing between them was held steady and would vary as a function of time when it was moved. It would have been an obvious design choice, having no functional significance, to deflect all the beams at the same time in the same direction. Any time this happened, the electrodes on opposite sides of the portion of the insulating carrier between any two adjacent apertures would inherently be of opposite polarities. The thickness of each plate is a matter for routine experimentation.

Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Poole as applied to claims 41, 42, 49, 50, 56, and 57 above, and further in view of Koornneef et

Art Unit: 2881

al.. While Le Poole prefers to use aluminum oxide as the material of the insulating carrier, Koornneef et al. teaches at lines 18-21 in column 2 that polyamide is equivalent to aluminum oxide for insulating purposes. The substitution of a polyamide carrier to support the deflection plates instead of the aluminum oxide carrier suggested by Le Poole would therefore have been an obvious substitution of equivalent parts.

Claims 45-48 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Poole as applied to claims 41, 42, 49, 50, 56, and 57 above, and further in view of Aitken. Aitken teaches that electrostatic deflection plates may be curved. Note especially the parallel curved plates illustrated in Figure 10b. It would have been obvious to a person having ordinary skill in the art to make the individual deflectors in the Le Poole deflection system curved in the manner taught by Aitken in order to make use of the desirable focusing properties described by Aitken when the individual charged particle beams were always to be deflected 90<sup>0</sup>.

Claims 52, 54, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Poole as applied to claims 41, 42, 49, 50, 56, and 57 above, and further in view of Ando et al.. While in the preferred embodiment Le Poole provides uniform spacing between the deflector plates, such spacing is not required. Figure 8 of Ando et al. illustrates that it is also known to vary the spacing between adjacent apertures (and thereby also between adjacent deflection plates) in a multideflector as a function of position within the multideflector. It would have been an obvious design choice to vary the spacing between adjacent deflectors in the Le Poole system in the manner illustrated by Ando et al. if a non-uniform spacing of the individual beams was desired.

Art Unit: 2881

Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Poole and Ando et al. as applied to claims 52, 54, and 55 above, and further in view of Aitken as applied to claims 45-48 and 51 above.

Claims 1-40 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:  
The prior art does not teach the use of a multideflector in a time-of-flight mass spectrometer.

The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack I. Berman whose telephone number is (703) 308-4849. The examiner can normally be reached on M-F (8:30-6:00) with every second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*Jack I. Berman*  
Jack I. Berman  
Primary Examiner  
Art Unit 2881

jb  
July 9, 2002